

**J. Sargeant Reynolds Community College  
Course Content Summary**

**Course Prefix and Number:** DSL 150

**Credits:** 3

**Course Title:** Mobile Hydraulics and Pneumatics

**Course Description:** Introduces the theory, operation, and maintenance of hydraulic/pneumatic systems and devices used in mobile applications. Emphasizes the properties of fluid, fluid flow, fluid states, and application of Bernoulli's equation. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

**General Course Purpose:** To examine the fundamentals and principles of hydraulics and pneumatics, their theory of operation, and their application to modern construction, agriculture, and transport equipment.

**Course Prerequisites and Co-requisites:**

None

**Student Learning Outcomes:**

Upon completing the course, the student will be able to

- a. Recognize the theory and principles of hydraulics and pneumatics (fluid power);
- b. Identify the various types of hydraulic and pneumatic systems (fluid power);
- c. Identify the various components of these systems and their function;
- d. List maintenance procedures for the various components of the systems;
- e. List the causes of failures within the systems and the remedies of these failures;
- f. List the basic steps to be followed in diagnostic and testing procedures;
- g. Read and understand schematics;
- h. Perform basic troubleshooting skills; and
- i. Perform basic repairs.

**Major Topics to Be Included:**

- a. Theory of hydraulics
- b. Hydraulic components
- c. Theory of pneumatics
- d. Pneumatic components
- e. Troubleshooting hydraulic/pneumatic systems
- f. Fluid power symbology

**Date Created/Updated (Month, Day, and Year):** January 24, 2019